

**Road Management Plan Module  
for the  
Timberland Planning Component**

**California Department of Fish and Game  
Northern California - North Coast Region  
Interior Timberland Planning Team**

**Leadperson**

Curt Babcock

**Resource Issue**

Forest roads are a major source of sedimentation, which is the primary non-point source pollutant developed from forest management activities. Timber companies own and manage large tracts of land that include numerous roads and associated watercourse crossings. Many roads and crossings may be relics of past practices, technologies, and forest practices. Currently, timber companies may only assess segments of their road system when preparing a timber harvesting plan (THP) or after a significant storm event. Main haul routes are usually maintained due to frequent use, but other roads may be neglected until they are needed for access, which may be several years or longer between management activities. Long-term road planning efforts may never occur.

It is important that landowners become knowledgeable about the existing condition of their forest road system to facilitate proper management. Roads and crossings that are not properly managed pose a greater risk to aquatic habitats by increasing sediment loads, altering channel morphology, destabilizing streambanks, modifying drainage networks, and creating barriers to fish migration. A good forest road system is one that provides access, enhances property values, and minimizes environmental disturbance and damage. Impacts from roads and crossings on aquatic and salmonid habitat can be addressed with a road management plan that includes an assessment, current design standards, control of use during sensitive times, closure and/or decommissioning of environmentally sensitive roads and crossings, a maintenance schedule, and long-term planning.

**Goal**

- Programmatically address aquatic impacts from roads and watercourse crossings through timber company implementation of road management plans.

## **Objectives**

- Encourage timber companies to develop and implement road management plans
- Provide landowner flexibility
- Concurrently develop programmatic Streambed Alteration Agreements
- Provide assurance to the Interior Timberland Planning Team (Team) that roads and crossings are appropriately managed
- Streamline THP review of roads and crossings for both timber companies and the Team
- Jointly monitor road management plans for implementation, effectiveness, and for meeting goals

## **Strategic Plan**

The Team will focus efforts to encourage the development and implementation of road management plans with companies that either are within anadromous fishery basins, have a programmatic Streambed Alteration Agreement, or that express an interest in these efforts. Because road management plans benefit the aquatic environment and the species that depend on this habitat, the Team is interested in focusing efforts toward basins that support anadromous fisheries and other listed aquatic species. Timber companies that have a programmatic Streambed Alteration Agreement will be able to implement the upgrade and abandonment components of a road management plan without further environmental review and delay. This will give timber companies flexibility for scheduling road projects.

Incentives for timber companies to adopt a road management plan include:

- reduced Team THP review regarding roads and crossings and subsequent mitigation requirements for immediate work as part of THP approval
- increased grant funding opportunities
- additional flexibility for project timing
- opportunity for foresight
- the collection of additional information required for sound management and long-term planning
- no surprises
- reduced long-term costs for maintenance, and improved functionality

Companies with a Team concurrence on a road management plan would not be subject to additional THP review by the Team regarding roads and crossings. This would streamline the THP review process and give the Team assurance regarding the company's management of their road system and the timber company no surprises assurance. Instead, the Team would be interested in monitoring the company's progress toward meeting the road management plan goals.

Grant funding opportunities are available through the Department of Fish and Game's Restoration Grants Program for projects that improve fisheries habitat. Program funds are limited to projects in the coastal and central valley drainages, and have preference for proposals that benefit salmon and steelhead. This program may fund the inventory, upgrade, and abandonment elements of a road management plan. Team staff could assist timber companies identify and prioritize projects or activities with potential for funding, and provide expertise regarding project formulation, proposal content, time-frames, and administration.

After completing the inventory component, companies with Team concurrence of their road management plan would have the information needed to make sound management decisions and to identify annual projects and future expenditures based on the goals of the road management plan.

A sound road management plan should include the following components:

- Road network and stream crossing inventory
- Project prioritization
- Design, construction, and abandonment standards
- Use restrictions
- Inspection and maintenance program
- Long-term transportation planning
- Schedule
- Goals

The following elements should be addressed within the above components of a road management plan: objectives for addressing specific project sites; WLPZ roads; roads on steep slopes; crossing types; crossing sizing; crossing function; fish passage; riparian function; hydrologic disconnection (road drainage does not connect with natural drainage network); gully and landslide processes; road surfacing; inspection and maintenance schedule; and a winter operating plan.

The inventory will help identify problems and provide the basis for prioritizing road maintenance, upgrade, and abandonment. The inventory could include all road segments and crossings, general use, suggested remedies, general risk factor, and cost. Through prioritization, road and crossing upgrades and abandonments will be scheduled based on the resource risk and cost. Projects that incur the greatest resource risk should receive a higher priority for fixing. Prioritization and treatment should be done at the road segment level for cost effectiveness. Team staff could provide expertise and assistance regarding project prioritization and fish passage evaluation.

Design, construction, reconstruction, and abandonment standards for roads and crossings should be specified and up to date. The *Handbook for Forest and Ranch Roads* by Weaver and Hagens, 1994 is generally recommended. Also, conditions

should be included which specify when engineers or geologists would be used.

Maintenance is the key to reducing long-term sediment production from forest roads, and should include an inspection program. An inspection program would specify the time interval or criteria triggering inspection as well as documentation procedures. Time intervals may be yearly or based on rainfall amounts. Use restrictions regarding wet weather use (including winter hauling), temporary and seasonal roads, and dust abatement are important to minimize sediment transport to watercourses.

Long-term transportation planning is the analysis of the existing road system relative to yarding systems and access needs, identification of roads to abandon and new roads needed for future operations. This is essential for the development of an efficient, useful, and environmentally sound road system and should be conducted after the inventory on a watershed or tract level and account for appropriate yarding methods.

Finally, a schedule and goals should be developed for each component of the road management plan with benchmarks for evaluation. This may include such elements as a timetable for inventories, upgrades and abandonments, inspection intervals and triggers, long-term planning by basin, etc. Benchmarks should be incorporated to spur self-evaluation and prompt timely implementation.

## **Monitoring**

Team monitoring will be an important component of road management plans to ensure implementation by the company and effectiveness of the plan. Team monitoring will occur yearly to verify implementation. Monitoring will occur jointly in coordination with the timber company.

## **Adaptive Management**

Adaptive management will be an important component of road management plan implementation. Through monitoring by Team and reporting by the timber companies, the progress status will be compared to goals set forth in the road management plan. Goals may need to be re-visited to address appropriate timelines for inventory, planning, upgrade, and abandonment. Also, future road management plans will incorporate any necessary revisions updated and revised scheduling, standards, and goals.

## **Measures of Success**

Success will be measured by the extent to which the following are met:

- Timber companies develop and implement a road management plan.
- Road management plan goals regarding inventory, planning, prioritization, upgrade,

and abandonment are received by the Team.

- Timber companies meet goals of their road management plan.
- Team and timber company staff conduct joint effectiveness monitoring.
- Team THP review of impacts associated with roads and watercourse crossings are reduced.
- Pre-harvest inspection recommendations regarding roads and crossings decrease.